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| 10/751,477 | 01/06/2004 | Dong Jae You | 041993-5363 | 3545 |
| 9629 7590 12/24/2008 MORGAN LEWIS & BOCKIUS LLP 1111 PENNSYLVANIA AVENUE NW WASHINGTON, DC 20004 | | | | |
| EXAMINER | | | | |
| CHEN, WEN YING PATTY | | | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/751,477

Applicant(s)

YOU, DONG JAE

Examiner

WEN-YING PATTY CHEN

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4-9, 11-15 and 17-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-9, 11-15 and 17-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on Nov. 17, 2008 has been entered.

Response to Amendment

Applicant's Amendment filed on Nov. 17, 2008 has been entered. Claim 10 is cancelled per the Amendment filed, therefore, claims 1, 2, 4-9, 11-15 and 17-23 remain pending in the current application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 11, 14, 17-18 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagahama et al. (JP2000-315414) in view of Lee et al. (US 6295105) further in view of Shiotani et al. (JP 2001-338512).

With respect to claim 1 (Amended): Nagahama et al. discloses in Figure 1 a liquid crystal display device, comprising:

a liquid crystal display panel (element 13);

a backlight unit having a light guide plate (element 3), a fluorescent lamp (element 7), a reflection sheet (element 14) substantially enclosing the fluorescent lamp to reflect light emitted from the fluorescent lamp, and a bottom cover (element 1) having an end portion with a shape that substantially follows a contour of the reflection sheet (as shown) to substantially surround and encase the reflection sheet and to support and affix the reflection sheet, the reflection sheet enclosing an outer side of the fluorescent lamp except for a light exit portion of the fluorescent lamp and overlapping a portion of the light guide plate (as shown).

Nagahama et al. does not specifically disclose at least one optical sheet positioned along an upper surface of the light guide plate and a chassis for supporting and affixing the liquid crystal display panel and the backlight unit and that the bottom cover is positioned to leave a predetermined interval from the light guide plate to simplify assembly of the light guide plate and the predetermined interval is within a range of about 0.1mm to about 50mm.

However, Lee et al. disclose in Figure 9 of placing at least one optical sheet (element 116) positioned along an upper surface of the light guide plate, wherein an end portion of the optical sheet is positioned on an end portion of the reflection sheet (element 124) and further a chassis (element 130) for supporting and affixing the liquid crystal display panel and the backlight unit and Shiotani et al. disclose in Figures 3 and 4 a bottom cover (element 3) positioned with a predetermined interval (element C) from the light guide plate (element 5) and the predetermined interval is 0.1mm, which is within the range of 0.1mm to 50mm (Paragraph 0040).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Nagahama et al. wherein the display device further comprises optical sheets and a chassis as taught by Lee et al., since by employing the optical sheets help to improve light distribution thus providing uniform illumination of the display and the chassis helps to attach the liquid crystal display to the backlight unit and wherein the bottom cover is positioned 0.1mm from the light guide plate as taught by Shiotani et al., since Shiotani et al. teach that such configuration of the bottom cover and the light guide plate helps to reduce the amount of light leakage through the gap (Abstract).

As to claim 21: Nagahama et al. further disclose in Figure 1 that the end portion of the bottom cover (element 1) contacts the reflection sheet (element 14).

With respect to claim 11 (Amended): Nagahama et al. discloses in Figure 1 a backlight unit, comprising:

a panel-type guide plate (element 3) having a light projection plane and a light incident plane;

a reflection plate (element 4) along a rear side of the light guide plate;
a lamp assembly at the light incident plane of the light guide plate, the lamp assembly including the fluorescent lamp (element 7) and a reflection sheet (element 14) at an outer side of fluorescent lamp; and

a bottom cover (element 1) extending from a rear side of the reflection plate to an outer side of the reflection sheet such that an end portion of the bottom cover extends to the outer side of the reflection sheet substantially following a contour of the reflection sheet (as shown) to substantially surround and encase the reflection sheet and to support and affix the reflection sheet, the reflection sheet enclosing an outer side of the fluorescent lamp except for a light exit portion of the fluorescent lamp and overlapping a portion of the light guide plate (as shown).

Nagahama et al. does not disclose at least one optical sheet over the light projection plane of the light guide plate and the backlight unit and that the bottom cover is positioned to leave a predetermined interval from the light guide plate to simplify assembly of the light guide plate and the predetermined interval is within a range of about 0.1mm to about 50mm.

However, Lee et al. discloses in Figure 9 of placing at least one optical sheet (element 116) positioned along an upper surface of the light guide plate, wherein an end portion of the optical sheet is positioned on an end portion of the reflection sheet (element 124) and Shiotani et al. disclose in Figures 3 and 4 a bottom cover (element 3) positioned with a predetermined interval (element C) from the light guide plate (element 5) and the predetermined interval is 0.1mm, which is within the range of 0.1mm to 50mm (Paragraph 0040).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Nagahama et al.

wherein the display device further comprises optical sheets as taught by Lee et al., since by employing the optical sheets help to improve light distribution thus providing uniform illumination of the display and wherein the bottom cover is positioned 0.1mm from the light guide plate as taught by Shiotani et al., since Shiotani et al. teach that such configuration of the bottom cover and the light guide plate helps to reduce the amount of light leakage through the gap (Abstract).

As to claim 14: Nagahama et al. further discloses in Figure 1 that an extension portion of the reflection plate (element 4) forms the reflection sheet (element 14).

As to claim 17: Nagahama et al., Lee et al. and Shiotani et al. disclose all of the limitations set forth in claim 11 and Nagahama et al. further disclose in Figure 1 that end portions of the reflection sheet (element 14) overlap a portion of the light guide plate (element 3) by a first overlap amount, but all do not specifically disclose that the first overlap amount is within a range of about 0.2mm to about 30mm.

However, Shiotani et al. further disclose in Figure 3 a reflection sheet (element 8) overlapping the light guide plate (element 5) with an overlapping portion (element 21a) by an amount of 0.5mm (element w; Paragraph 0040), which is in the specified range of between 0.2mm and 30mm.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to construct a liquid crystal display device as taught by Nagahama et al., Lee et al. and Shiotani et al. wherein the first overlapping amount is as taught by Shiotani et al., since Shiotani et al. teaches that the overlapping amount determines the effective light-emitting

dimension and the unused section of the light-emitting surface of the light guide plate (Paragraph 0040).

As to claim 22: Nagahama et al. further disclose in Figure 1 that the end portion of the bottom cover (element 1) contacts the reflection sheet (element 14).

With respect to claim 18 (Amended): Nagahama et al. disclose in Figure 1 a backlight unit for a liquid crystal display device, comprising:

- a light guide plate (element 3);
- a reflection plate (element 4) along a rear side of the light guide plate;
- a fluorescent lamp (element 7) along an outer periphery of the light guide plate;
- a reflection sheet (element 14) substantially enclosing the fluorescent lamp along the outer periphery of the light guide plate to reflect light from the fluorescent lamp to the light guide plate; and

- a bottom cover (element 1) along a rear side of the reflection plate having an end portion with a shape that substantially follows a contour of the reflection sheet (as shown) to substantially surround and encase the reflection sheet and to support and affix the reflection sheet, the reflection sheet enclosing an outer side of the fluorescent lamp except for a light exit portion of the fluorescent lamp and overlapping a portion of the light guide plate.

Nagahama et al. does not disclose at least one optical sheet positioned along an upper surface of the light guide plate and that the bottom cover is positioned to leave a predetermined interval from the light guide plate to simplify assembly of the light guide plate and the predetermined interval is within a range of about 0.1mm to about 50mm.

However, Lee et al. discloses in Figure 9 of placing at least one optical sheet (element 116) positioned along an upper surface of the light guide plate, wherein an end portion of the optical sheet is positioned on an end portion of the reflection sheet (element 124) and Shiotani et al. disclose in Figures 3 and 4 a bottom cover (element 3) positioned with a predetermined interval (element C) from the light guide plate (element 5) and the predetermined interval is 0.1mm, which is within the range of 0.1mm to 50mm (Paragraph 0040).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Nagahama et al. wherein the display device further comprises optical sheets as taught by Lee et al., since by employing the optical sheets help to improve light distribution thus providing uniform illumination of the display and wherein the bottom cover is positioned 0.1mm from the light guide plate as taught by Shiotani et al., since Shiotani et al. teach that such configuration of the bottom cover and the light guide plate helps to reduce the amount of light leakage through the gap (Abstract).

As to claim 20: Nagahama et al. further discloses in Figure 1 that an extension portion of the reflection plate (element 4) forms the reflection sheet (element 14).

As to claim 23: Nagahama et al. further disclose in Figure 1 that the end portion of the bottom cover (element 1) contacts the reflection sheet (element 14).

Claims 2 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagahama et al. (JP2000-315414), Lee et al. (US 6295105) and Shiotani et al. (JP2001-338512) in view of Lee (US 2003/0223020).

With respect to claim 2: Nagahama et al., Lee et al. and Shiotani et al. disclose all of the limitations set forth in claim 1, and Nagahama et al. further disclose in Figure 1 that the backlight unit further comprises:

a panel-type light guide plate (element 3) having a light projection plane and a light incident plane;

a reflection plate (element 4) along a rear side of the light guide plate; and

a lamp assembly at the light incident plane of the light guide plate, the lamp assembly including the fluorescent lamp (element 7) and the reflection sheet (element 14) at an outer side of the fluorescent lamp.

Nagahama et al., Lee et al. and Shiotani et al. do not disclose at least one optical sheet over the light projection plane of the light guide plate and a rectangular mold frame.

However, Lee discloses in Figures 31 and 32 of a backlight unit comprising a mold frame (element 500) for receiving the reflection plate, the light guide plate, the optical sheet, and the lamp assembly therein, wherein a bottom cover extends from a bottom of the mold frame.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Nagahama et al., Lee et al. and Shiotani et al. wherein the backlight unit of the display device comprises a mold frame as taught by Lee, since Lee teaches that by providing the mold frame allows the backlight assembly to be securely attached to the chassis.

As to claim 8: Nagahama et al. further discloses in Figure 1 that an extension portion of the reflection plate (element 4) forms the reflection sheet (element 14).

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagahama et al. (JP2000-315414), Lee et al. (US 6295105), Shiotani et al. (JP2001-338512) and Lee (US 2003/0223020) in view of Beiswenger et al. (US 4958911).

With respect to claim 4: Nagahama et al., Lee et al., Shiotani et al. and Lee disclose all of the limitations set forth in the previous claims and Nagahama et al. further discloses in Figure 1 that the reflection sheet (element 14) overlap a portion of the light guide plate (element 3) by a first overlap amount, but all do not disclose that the reflection sheet and the end portion of the bottom cover has a round shape.

However, Beiswenger et al. teaches in Figure 2 of forming a lamp reflection sheet (element 45) and an end portion of a bottom cover (element 24) in a round shape.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Nagahama et al., Lee et al., Shiotani et al. and Lee wherein the reflection sheet and the end portion of the bottom cover has a round shape as taught by Beiswenger et al., since Beiswenger et al. teaches that the curved corners helps to enhance the reflectance of the light thus improve the brightness of the illuminated light (Column 2, lines 39-60).

As to claim 5: Nagahama et al., Lee et al., Shiotani et al., Lee and Beiswenger et al. disclose all of the limitations set forth in the previous claims, but all do not specifically disclose that the first overlap amount is within a range of about 0.2mm to about 30mm.

However, Shiotani et al. further disclose in Figure 3 a reflection sheet (element 8) overlapping the light guide plate (element 5) with an overlapping portion (element 21a) by an

amount of 0.5mm (element w; Paragraph 0040), which is in the specified range of between 0.2mm and 30mm.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to construct a liquid crystal display device as taught by Nagahama et al., Lee et al., Shiotani et al., Lee and Beiswenger et al. wherein the first overlapping amount is as taught by Shiotani et al., since Shiotani et al. teaches that the overlapping amount determines the effective light-emitting dimension and the unused section of the light-emitting surface of the light guide plate (Paragraph 0040).

Claims 6-7 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagahama et al. (JP2000-315414), Lee et al. (US 6295105) and Shiotani et al. (JP2001-338512) in view of Nakano (US 2003/0053008).

Nagahama et al., Lee et al. and Shiotani et al. disclose all of the limitations of the liquid crystal display device set forth in the previous claims, but all do not disclose that the reflection sheet is formed of one of a synthetic resin including one of a polymer having a high reflexivity and Ti.

However, Nakano discloses in Paragraph 0034 and 36 and Figure 1 a reflection sheet (element 2) formed of one of a synthetic resin selected from the group consisting of ABS, PET, PVC and a non-metallic substance, which includes one of a polymer having a high reflexivity and Ti.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to make the reflection sheet for the liquid crystal display device disclosed by

Nagahama et al., Lee et al. and Shiotani et al. with the reflection sheet composition disclosed by Nakano, since the use of a polymer having a high reflexivity and Ti, especially the white titanium, exhibits a strong effect to improve the concealing property (Page 3, paragraph 0036).

Claims 9 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagahama et al. (JP2000-315414), Lee et al. (US 6295105) and Shiotani et al. (JP2001-338512) in view of Beiswenger et al. (US 4958911).

Nagahama et al., Lee et al. and Shiotani et al. disclose all of the limitations set forth in the previous claims and Nagahama et al. further discloses in Figure 1 that the reflection sheet (element 14) overlap a portion of the light guide plate (element 3) by a first overlap amount, but all do not disclose that the reflection sheet and the end portion of the bottom cover has a round shape.

However, Beiswenger et al. teaches in Figure 2 of forming a lamp reflection sheet (element 45) and an end portion of a bottom cover (element 24) in a round shape.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Nagahama et al., Lee et al. and Shiotani et al. wherein the reflection sheet and the end portion of the bottom cover has a round shape as taught by Beiswenger et al., since Beiswenger et al. teaches that the curved corners helps to enhance the reflectance of the light thus improve the brightness of the illuminated light (Column 2, lines 39-60).

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nagahama et al. (JP2000-315414), Lee et al. (US 6295105) Shiotani et al. (JP2001-338512) in view of Kim (US 6064455).

Nagahama et al., Lee et al. and Shiotani et al. disclose all of the limitations set forth in claim 18, but all do not disclose that the reflection plate and the reflection sheet are not integrally formed such that a first end portion of the reflection sheet overlaps a portion of the reflection plate.

However, Kim teaches in Column 3 line 63 through Column 4 line 20 of forming a reflection sheet and a reflection plate such that an end portion of the reflection sheet overlaps a portion of the reflection plate.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a backlight unit as taught by Nagahama et al., Lee et al. and Shiotani et al. wherein the reflection plate and the reflection sheet are formed separately as taught by Kim, since Kim teaches that by forming the reflection sheet separate from a reflection plate allows the reflection sheet to be made of a material having relatively high reflectivity and flexibility (Column 3, lines 33-37).

Response to Arguments

Applicant's arguments with respect to all claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WEN-YING PATTY CHEN whose telephone number is (571)272-8444. The examiner can normally be reached on 8:00-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Nelms can be reached on (571)272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

WEN-YING PATTY CHEN
Examiner
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/W. P. C./
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